

Title (en)  
SYSTEM AND METHOD FOR ENHANCED RECOVERY OF ARGON AND OXYGEN FROM A NITROGEN PRODUCING CRYOGENIC AIR SEPARATION UNIT

Title (de)  
SYSTEM UND VERFAHREN ZUR VERBESSERTEN RÜCKGEWINNUNG VON ARGON UND SAUERSTOFF AUS EINER STICKSTOFF ERZEUGENDEN KRYOGENEN LUFTZERLEGUNGSANLAGE

Title (fr)  
SYSTÈME ET PROCÉDÉ DE RÉCUPÉRATION ASSISTÉE D'ARGON ET D'OXYGÈNE À PARTIR D'UNE UNITÉ DE SÉPARATION D'AIR CRYOGÉNIQUE DE PRODUCTION D'AZOTE

Publication  
**EP 3784965 A2 20210303 (EN)**

Application  
**EP 19727759 A 20190422**

Priority  
• US 201815962297 A 20180425  
• US 2019028437 W 20190422

Abstract (en)  
[origin: US2019331419A1] A moderate pressure air separation unit and air separation cycle is disclosed that provides for up to about 96% recovery of argon, an overall nitrogen recovery of 98% or greater and limited gaseous oxygen production. The air separation is configured to produce a first high purity oxygen enriched stream and a second lower purity oxygen enriched stream from the lower pressure column, one of which is used as the refrigerant to condense the argon in the argon condenser, with the resulting vaporized oxygen stream used to regenerate the temperature swing adsorption pre-purifier unit. All or a portion of the first high purity oxygen enriched stream is vaporized in the main heat exchanger to produce the gaseous oxygen products.

IPC 8 full level  
**F25J 3/00** (2006.01)

CPC (source: EP KR US)  
**F25J 3/04024** (2013.01 - US); **F25J 3/0409** (2013.01 - EP KR); **F25J 3/04169** (2013.01 - US); **F25J 3/04181** (2013.01 - EP KR); **F25J 3/04187** (2013.01 - US); **F25J 3/04193** (2013.01 - EP KR); **F25J 3/04212** (2013.01 - EP KR); **F25J 3/0423** (2013.01 - EP KR); **F25J 3/0426** (2013.01 - EP); **F25J 3/04303** (2013.01 - EP KR); **F25J 3/04406** (2013.01 - US); **F25J 3/04412** (2013.01 - EP KR); **F25J 3/04672** (2013.01 - EP KR); **F25J 3/04684** (2013.01 - EP KR); **F25J 3/04715** (2013.01 - US); **F25J 3/04727** (2013.01 - EP KR); **F25J 3/048** (2013.01 - US); **F25J 3/0486** (2013.01 - EP KR); **F25J 2200/08** (2013.01 - US); **F25J 2200/20** (2013.01 - EP); **F25J 2200/50** (2013.01 - US); **F25J 2200/94** (2013.01 - EP KR); **F25J 2205/60** (2013.01 - EP KR); **F25J 2210/06** (2013.01 - US); **F25J 2210/40** (2013.01 - US); **F25J 2210/42** (2013.01 - EP); **F25J 2215/40** (2013.01 - US); **F25J 2215/42** (2013.01 - US); **F25J 2230/42** (2013.01 - EP KR); **F25J 2230/52** (2013.01 - EP KR); **F25J 2235/50** (2013.01 - EP KR); **F25J 2240/40** (2013.01 - EP); **F25J 2245/50** (2013.01 - EP KR)

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See references of WO 2019209672A2

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Designated extension state (EPC)  
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DOCDB simple family (publication)  
**US 10663223 B2 20200526**; **US 2019331419 A1 20191031**; CA 3097179 A1 20191031; CA 3097179 C 20211026; CN 111989528 A 20201124; CN 111989528 B 20210827; EP 3784965 A2 20210303; KR 102258573 B1 20210531; KR 20200133801 A 20201130; WO 2019209672 A2 20191031; WO 2019209672 A3 20191205

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**US 201815962297 A 20180425**; CA 3097179 A 20190422; CN 201980026675 A 20190422; EP 19727759 A 20190422; KR 20207031735 A 20190422; US 2019028437 W 20190422